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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

**ORIGINAL
FILE**

In the Matter of

Amendment of the Commission's
Rules to Establish New Personal
Communications Services

) GEN Docket No. 90-314
) ET Docket No. 92-100
)
)
) RM-7140, RM-7175, RM-7617,
) RM-7618, RM-7760, RM-7782,
) RM-7860, RM-7977, RM-7978,
) RM-7979, RM-7980
)
) PP-35 through PP-40, PP-79
) through PP-85

COMMENTS

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TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	vi
I. INTRODUCTION	2
II. SEVERAL IMPORTANT THRESHOLD ISSUES MUST BE ADDRESSED BEFORE NEW PCS SYSTEMS CAN BE EFFICIENTLY AND EFFECTIVELY IMPLEMENTED.	4
A. PCS Policies Should Be Based Upon Marketplace Realities Rather Than Speculative Assumptions.	5
1. The <u>Notice</u> presupposes an unprecedented demand for new services.	6
2. GTE is conducting extensive market tests to assess the nature and extent of marketplace demand for PCS.	9
B. PCS Should Be Introduced In A Way That Strengthens The Telecommunications Infrastructure.	13
1. The <u>Notice</u> fails to address important questions regarding PCS' implications for local exchange telephone service and the public switched telephone network infrastructure.	14
a. PCS could have an impact on current, regulatory-mandated, support programs.	14
b. PCS could impact local rates and the jurisdiction of state commissions.	16
c. The <u>Notice</u> ignores significant interconnection issues that should be resolved prior to the implementation of PCS.	19

2.	The Commission needs to assess whether the <u>Notice</u> 's goal should be the promotion of innovative telecommunications services rather than inefficient duplication of existing cellular services.	20
3.	The <u>Notice</u> fails to address issues associated with cable television entry into PCS.	22
C.	The Role Of Foreign Investment In PCS And Reciprocal United States Companies' Rights Should Be Considered.	24
III.	FCC PCS POLICIES SHOULD PROMOTE FAIR WIRELESS COMPETITION AND DIVERSITY OF SERVICES.	26
A.	Pro-Competitive Mobile Service Policies And A Level Playing Field Benefit The Public.	26
B.	PCS Policies Should Maximize Competitive Entry Opportunities For New Services.	28
1.	Five segments of licensed spectrum with 20 MHz spectrum blocks should be authorized for PCS.	28
2.	PCS service areas should follow the cellular MSA/RSA model.	32
IV.	CELLULAR AND TELEPHONE CARRIER PARTICIPATION IN PCS WILL PROMOTE COMPETITION AND EXPANDED SERVICES TO THE PUBLIC.	36
A.	Cellular Carriers Should Have Full Eligibility To Develop And Deploy New And Expanded Personal Communications Services.	36
1.	Cellular carriers have a proven track record of performance and expertise that can increase the benefits of new Personal Communications Services.	36
2.	Cellular carriers should be encouraged to participate in new PCS spectrum outside their existing markets.	38

3.	A ban on cellular carrier participation in new PCS spectrum in their cellular service areas would be unwarranted.	39
B.	Telephone Company Participation In PCS Should Be Encouraged And Access To New Wireless Technologies For Telephone Company Services Should Be Ensured. . . .	42
1.	There is no basis for barring telephone companies from PCS participation inside or outside their exchange telephone service areas.	45
2.	The <u>Notice</u> properly recognizes that a spectrum allocation should be made for telephone companies to provide access to the wireline network.	46
3.	LECs need to be full participants in the competitive provision of PCS.	47
V.	COMMISSION POLICIES FOR NEW AND EXISTING PERSONAL COMMUNICATIONS SERVICES MUST ENSURE THAT COMPETING SERVICES ARE SUBJECT TO COMPARABLE REGULATIONS.	49
A.	The <u>Notice</u> Raises Important And Thorny Regulatory Issues For Both PCS Providers And Established Service Providers.	50
B.	In Assessing Regulatory Alternatives, An Overriding Objective Should Be To Ensure Comparable Treatment Of Existing And New Personal Communications Services. . . .	52
VI.	PCS LICENSING POLICIES SHOULD ENSURE THAT TECHNICALLY AND FINANCIALLY QUALIFIED APPLICANTS RECEIVE LICENSES, AND A COMPARATIVE PREFERENCE SHOULD BE GIVEN TO EXPERIENCED SERVICE PROVIDERS. . .	55
A.	Stringent Requirements Are Essential To Prevent Speculative Abuses Of The Licensing Process.	55
B.	The Licensing Process Should Recognize And Prefer Experienced Providers Of Wireless Services And Others Who Will Deploy PCS Rapidly.	59

VII.	THE COMMISSION SHOULD RELY ON INDUSTRY STANDARDS BODIES TO ANSWER PCS TECHNICAL ISSUES.	60
A.	The <u>Notice</u> Correctly Concludes That PCS Providers Should Only Be Subject To Minimal Technical Regulations.	60
B.	International Interoperability Is Important For Compatibility With Our North American Neighbors.	63
C.	Radio Frequency Effects Questions Should Be Resolved By Reference To The 1991 IEEE Standard.	64
VIII.	CONCLUSION	65

Exhibit A

SUMMARY

The Commission's Notice of Proposed Rule Making ("Notice") seeks comment on a wide variety of public policy issues surrounding the deployment of new Personal Communications Services ("PCS"). The Notice identifies regulatory goals; proposes a flexible, market-driven approach to ensuring the adequacy of services; advances several spectrum allocation plans; and solicits comment on policies and rules for the licensing and operation of PCS systems in both the 2 GHz and 900 MHz bands. The actions contemplated in these proposals will shape the future direction and structure of telecommunications in the United States, both wireless and wireline.

GTE believes that the rapid and successful introduction of PCS will require sound regulatory decisions reflecting great foresight. Unfortunately, the Notice assumes massive spectrum allocations are immediately required, and, in the haste to allocate spectrum, overlooks a number of basic concerns:

- The Notice proposes to allocate tremendous theoretical capacity for new services solely on the basis of technology trials -- not marketing trials. GTE believes the failure of PCS in the United Kingdom illustrates the need for accurate, reliable consumer acceptance studies to assess demand.
- The Notice fails to address or substantively evaluate how to integrate new services to best strengthen the Nation's telecommunications infrastructure. In particular, no consideration is given to the potential effects of PCS on vital local exchange telephone services, the associated support systems designed to ensure universal telephone service, or interconnection access arrangements.

- Similarly, the Notice assumes cellular comparability as a paramount goal without addressing whether the technical and service characteristics of 2 GHz PCS would be better suited to expanding the range of available offerings.
- The Notice also ignores issues raised by cable television entry into PCS and the rights of competitors, resellers, and users to access their services and infrastructure.
- Last, but not least, the Notice does not consider the effects of permitting foreign investments and control in this critical element of the Nation's communications systems or how to ensure reciprocal rights for United States companies.

GTE believes these major issues must be addressed prior to implementing new PCS systems.

Assuming a large demand for PCS is verified, GTE supports market-driven regulation as the optimum means of fostering diverse, low-cost, and high-quality PCS. In order to ensure that a robust, competitive marketplace for PCS develops, the FCC should maximize entry opportunities by creating five allocations of 20 MHz each and licensing PCS providers following the cellular Metropolitan Statistical Area ("MSA")/Rural Service Area ("RSA") model. Twenty megahertz allocations and MSA/RSA license territories are technically, economically, and practically feasible for offering PCS. Consequently, imposing arbitrary entry restrictions by creating unnecessarily large allocations for each system or massive multi-market territories does not serve the public interest.

GTE similarly believes that competition would be enhanced if the Commission does not create artificial barriers to the eligibility of cellular

carriers and telephone companies for new PCS spectrum. Both cellular carriers and local exchange companies ("LEC") offer experience, expertise, and existing infrastructures that would make them ideal providers of new PCS. And, history suggests that both of these classes of entrants would be vigorous competitors. GTE submits that the purported rationales for restricting cellular and LEC eligibility for new PCS spectrum to expand their services do not stand up to a critical analysis.

In authorizing PCS, the Commission should establish comparable regulations for functionally similar services. It is critically important to ensure that policies for new and existing Personal Communications Services (e.g., cellular and paging) are subject to comparable regulation. An overriding objective should be regulatory parity for competing wireless service providers -- irrespective of whether they operate in the cellular or 2 GHz spectrum bands.

GTE also believes that PCS licensing policies should encourage qualified applicants and discourage speculators. This can be accomplished by utilizing stringent anti-speculation safeguards coupled with lottery or comparative preferences for experienced service providers. The FCC should not permit PCS to be delayed by either a flood of mass-market applications or by authorizing licensees who cannot or will not rapidly deploy PCS networks.

As a final matter, GTE also addresses a number of other technical and regulatory issues that should be resolved prior to implementation of PCS. In general, PCS technical issues should be left to the industry. However, issues of international compatibility and radio frequency energy exposure should appropriately be dealt with at the federal level.

GTE supports the Commission's efforts to rapidly bring PCS from its current field trial status to a commercial market. At the same time, however, the FCC is considering the largest mobile radio allocation in recent history. Accordingly, by giving careful consideration to a number of important issues prior to PCS licensing, the Commission can ultimately provide for more efficient, cost-effective, and consumer-oriented Personal Communications Services. GTE's specific comments elaborating on each of these issues are set forth below.

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COMMENTS

GTE Corporation, on behalf of the GTE Telephone Operating Companies ("GTOCs") and GTE Mobile Communications ("GTE Mobilcom") (collectively "GTE"), responds to the FCC's Notice of Proposed Rule Making and Tentative Decision, FCC 92-333 (Aug. 14, 1992) ("Notice" or "NPRM") proposing to allocate and license spectrum for a new family of Personal Communications Services ("PCS").¹ The FCC believes PCS will have "a great impact on the future development and configuration of all telecommunications networks by improving significantly their flexibility and functionality" and PCS "could increase productivity and efficiency across a broad array of industries and have a positive impact on the international competitiveness of the Nation's economy," NPRM, ¶4.

¹ The FCC amended its Notice by an Erratum, DA 92-1216 (Sept. 8, 1992).

I. INTRODUCTION

The Commission's NPRM is another step in a series of FCC actions directed toward evaluating the demand and need for PCS initiated in 1989 after receiving several petitions for rule making. The Commission has since issued a Notice of Inquiry and a Policy Statement; held an en banc hearing that addressed PCS; proposed and allocated a spectrum reserve for emerging technologies, including PCS; and tentatively awarded Pioneer's Preferences for PCS. The Commission also made recommendations and participated in negotiating international allocations that recognize and permit use of this spectrum for PCS.² Virtually all telecommunications companies have actively participated in the FCC's PCS proceedings, and over 100 companies are conducting more than 150 experiments pursuant to experimental licenses to develop and test Personal Communications Services and technologies, NPRM, ¶8.

² See International Telecommunications Union World Admin. Radio Conf., 6 FCC Rcd 3900 (1991) (Report); International Telecommunication Union, Final Acts of the World Administrative Radio Conference (WARC-92), Malaga-Torremolinos (1992); Addendum + Corrigendum to the Final Acts of the World Administrative Radio Conference (WARC-92), Malaga-Torremolinos (1992). See also Petition for Rulemaking of PCN America, Inc., RM-7175 (Nov. 7, 1989); Petition for Rulemaking of Cellular 21, Inc., RM-7140 (Sept. 22, 1989); Amendment of the Comm'n's Rules to Establish New Personal Communications Services, 5 FCC Rcd 3995 (1990) (Notice of Inquiry), 6 FCC Rcd 6601 (1991) (Policy Statement and Order); FCC 92-467 (Nov. 6, 1992) (Tentative Decision and Memorandum Opinion and Order); Redevelopment of Spectrum to Encourage Innovation in the Use of New Emerging Technologies, 7 FCC Rcd 1542 (1992) (Notice of Proposed Rule Making), FCC 92-357 (Sept. 4, 1992) (Further Notice of Proposed Rule Making), FCC 92-437 (Oct. 16, 1992) (First Report and Order and Third Notice of Proposed Rule Making).

GTE has been an active participant in all phases of this Docket and related proceedings. GTE has consistently urged the FCC to build an adequate record demonstrating the need and demand for these new services and properly balancing the public policy choices and impacts before allocating valuable spectrum resources for any new service -- including PCS. GTE supports the FCC's stated intent to optimize and balance four values in providing spectrum and a regulatory structure for PCS:

- universality;
- speed of deployment;
- diversity of services; and
- competitive delivery.

Id., ¶6.

The Commission states that it is determined to avoid a "regulatory morass" and delay in the delivery of PCS, id., ¶7. GTE agrees delaying needed services injures the public interest, but of equal concern is the long-term effect of adopting policies and regulations before all aspects of such actions can be fully considered. GTE supports reasoned decision-making and the delivery of new spectrum-based services where the demand for such services has been substantiated. In this spirit, the ensuing comments identify areas where careful inquiry is needed and modifications to the Notice's proposals are warranted.

II. SEVERAL IMPORTANT THRESHOLD ISSUES MUST BE ADDRESSED BEFORE NEW PCS SYSTEMS CAN BE EFFICIENTLY AND EFFECTIVELY IMPLEMENTED.

The Notice proceeds from the assumption that massive amounts of new spectrum are urgently needed for new Personal Communications Services. In this haste, however, numerous important threshold issues have been ignored or overlooked. If not rectified by focused, thoughtful consideration in this proceeding, these oversights will jeopardize the Commission's ability to establish a sound foundation for the Nation's future wireless services.

The Notice suffers from several glaring deficiencies or omissions. Demand for PCS is presumed without any factual foundation about its true dimensions or nature. The implications of PCS for local exchange telephone carriers, their customers, and Universal Telephone Service are barely noted in passing. Comparability of PCS with cellular is elevated to a paramount goal without considering whether technical and marketplace factors dictate different results. The legal and policy questions associated with cable television companies' entry into PCS are not even acknowledged, let alone addressed. Nor is the role of foreign investment in PCS examined or resolved.

As detailed below, GTE strongly urges the Commission to resist the temptations to rush to judgment concerning America's personal communications needs. Tailoring spectrum allocations to verifiable business

and consumer requirements and expectations is a condition precedent to the successful introduction of any new service. Deploying PCS in a manner that complements and strengthens existing telecommunications infrastructures optimizes their utility, efficiencies, and benefits for all concerned. These issues which affect the very fabric of American telecommunications can and must be considered before, not after, fundamental decisions are made about the appropriate framework for tomorrow's wireless services.

A. PCS Policies Should Be Based Upon Marketplace Realities Rather Than Speculative Assumptions.

The Notice assumes an enormous unmet demand for new Personal Communications Services. Unfortunately, this assumption is not corroborated by any meaningful market studies. Nor is this absence of tangible information particularly surprising since PCS contemplates a broad "family of services" that remain largely undefined and whose cost structures are yet unknown. In this factual vacuum, however, the Notice would nonetheless proceed without hesitation to allocate spectrum in such large quantities that all the traffic currently carried on wireline networks could be accommodated by PCS.³

³ The FCC is considering allocating up to the entire 140 MHz between 1850 and 1990 MHz for new PCS systems. Using current digital radio techniques, microcellular networks, digital signal processors, speech compression techniques, adaptive antenna technology, and interference cancellation techniques, the practical total capacity of this spectrum is potentially enough to carry all the current traffic from all the wireline networks by a multiple of several times.

As documented below, GTE does not believe that untested assumptions provide a sound foundation for critically important allocation decisions.⁴ Practical experience in the United Kingdom strongly suggests that understandable enthusiasm for new services must be tempered by testing in the real world. Accordingly, GTE has embarked upon market studies to provide hard data on the true nature and extent of public demand for PCS. Absent such input from GTE and other industry participants, the Commission simply cannot make informed decisions about basic PCS allocation issues.

1. The Notice presupposes an unprecedented demand for new services.

In its Notice, the FCC is proposing to dedicate a significant portion of the 220 MHz Emerging Technologies Reserve for PCS.⁵ As a baseline option, the FCC has proposed an allocation of 110 MHz of the 2 GHz reserve for PCS and 3 MHz of the 900 MHz band for what is called

⁴ The Commission, in fact, has a rule governing the introduction of statistical evidence into the record. See 47 C.F.R. § 1.363 (1991).

⁵ Redevelopment of the Spectrum to Encourage Innovation and in Use of New Telecommunications Technologies, FCC 92-437 (Oct. 16, 1992).

"narrowband" PCS, NPRM, ¶32.⁶ This presupposes an enormous demand for PCS.

In the Notice, the Commission takes a mere four paragraphs to discuss the demand and need for PCS, NPRM, ¶¶25-28. While the American public has demonstrated a thirst for products and services that increase mobility, there is no factual evidence to confirm exactly how much total new spectrum is required to "meet the full range of demand for PCS within a competitive framework," id., ¶25. In its discussion of demand, the FCC only cites one newsletter account of market studies as support for the proposition that there could be "over 60 million PCS users in the United States within ten years," id., ¶26. Based on this sparse record, the FCC has proposed options that could allocate 140 MHz of spectrum or more.

To date, the purported "studies" of PCS demand have essentially been technology trials. Few are designed to accurately and statistically capture demand data for defined PCS applications other than current cellular

⁶ The Commission also discusses alternatives that could expand the total ultimate allocation, including three licenses with 40 MHz each (i.e., 120 MHz); four licenses with 20 or 30 MHz each (again up to 120 MHz total); four licenses with 40 MHz each (i.e., 160 MHz); and five licenses with up to 40 MHz each (i.e., 200 MHz), NPRM, ¶40. The FCC also proposes an "additional" 10 MHz of spectrum for PCS that may be used by LECs within their service areas, NPRM, ¶¶77-78. Thus, the total amount of spectrum being discussed -- if all PCS options were provided -- could be 233 MHz. The FCC acknowledges this in the Notice at paragraph 40, when it states: "five licenses with 30 or 40 MHz, would require different separations . . . as well as the allocation of additional spectrum from one of the other proposed emerging technologies bands," NPRM, ¶40 (emphasis added). In addition, there is 3 MHz in the 900 MHz band discussed in the Notice.

applications. Moreover, since there is no "single" definition of PCS,⁷ it is unclear how accurate data could be derived in any event. The only way to properly measure and determine the demand for PCS is to define particular services and then offer those services to a statistically significant sample of the public for an extended period of time. This essential work has not been done by anyone.

The reasons for great care before rushing ahead with spectrum allocations based upon presumed demand are well-documented.⁸ This is especially true in a technologically dynamic field such as wireless where services undreamed of today can be realized tomorrow. The inherent scarcity of spectrum dictates great caution in overestimating a potential service -- particularly where the implementation is disruptive of existing services and has preclusionary effects on prospective services.

The wisdom of undertaking statistically valid demand studies is evidenced by the failure of PCS in the United Kingdom. GTE has consistently pointed out to the FCC that in the United Kingdom, despite an ample amount of spectrum being made available, and the involvement of reputable and technically qualified companies and consortia, the planned

⁷ The FCC has defined PCS as a "family of mobile or portable radio communications services which could provide services to individuals and business, and be integrated with a variety of competing networks," NPRM, ¶29.

⁸ See, e.g., Potential Users of Certain Orbital Allocations by Operators in the Direct Broadcast Satellite Service, 4 FCC Rcd 6306 (1989); Allocation of Spectrum for Digital Termination Systems for the Provision of Digital Communications Services, 86 F.C.C.2d 360 (1981), modified 90 F.C.C.2d 319 (1982).

United Kingdom Personal Communications Networks ("PCN") have been slow to evolve.⁹ The United Kingdom Telepoint offerings have also been failures. As GTE noted in its ET Docket 92-9 Comments concerning the United Kingdom: "Today, the yet-to-launch PCN providers are proceeding very cautiously to verify market demand before committing huge amounts of capital."¹⁰

2. GTE is conducting extensive market tests to assess the nature and extent of marketplace demand for PCS.

Importantly, there are trials underway that will provide accurate predictions of PCS demand. GTE has publicly announced and notified FCC Staff concerning GTE's current large-scale PCS market trial. GTE and its participants in the trial will be investing \$25-30 million to conduct the most comprehensive PCS market trial in the United States to date. The residential trial which began in August 1992 will conclude by the end of 1993. It will involve as many as 3,000 handsets and test various service offerings for residential and small business telephone customers covering 7,000 square miles in Florida's Tampa Bay area.

GTE will be testing PCS market characteristics, price elasticity, market size, and expected revenues. Customers have agreed to keep diaries or logs

⁹ See Comments of GTE Service Corp. at 21-24, GEN Docket 90-314, (Oct. 1, 1990); GTE Comments at 6-8, ET Docket No. 92-9 (June 5, 1992).

¹⁰ See Comments of GTE Service Corp. at 7, ET Docket No. 92-9 (June 5, 1992).

of calls made identifying their physical locations at the time of the calls.

This data, along with call records and other data, will also be used to evaluate traffic and engineering issues related to PCS. By providing PCS at different prices and in various arrangements, GTE will be able to "calibrate" earlier nationwide willingness-to-pay studies. These market tests will reveal demand and determine customers' willingness to pay based on actions, not words.

By conducting the trial over an extended time frame, GTE will get past the "gadget phase" that can cause studies to yield inaccurate data.

Preliminary data will be provided to the FCC throughout this proceeding consistent with protection of commercially sensitive information, as well as periodic updates of the data to the Commission over the duration of the market trial. A copy of the market trial press packet is attached as Exhibit A.

GTE will be offering different versions of PCS. In some cases, the wireless handset will be complementary to existing wireline service. For other customers, the PCS handset will replace the customer's current wireline service. As shown in the press packet information, by using special home control units, existing telephones, answering machines, and other terminal equipment in the home or small business will still be able to operate even if the existing telephone line is disconnected. Service is provided to these existing telephones and other customer premises equipment over the

PCS radio link as long as the PCS handset is positioned in the home control unit. The home control unit also functions as a PCS handset battery charger and speakerphone.

Several versions of GTE's PCS Tele-go^(sm) Service are available. The options include:

- Full-Mobility PCS. In this trial, the customer is offered an improved-quality cordless telephone service at home with the advantages of cellular-like mobility away from home. This service provides customers with a set number of minutes of usage for a fixed rate when they are within their neighborhood - their "home area." These same customers can continue to use the service outside their "home area" -- even when traveling in a moving vehicle -- for a nominal per-minute "premium area" charge. Calls are processed both inbound and outbound in all areas and hand-off between radio ports is allowed.
- Enhanced Telepoint. The second version of GTE's Tele-Go^(sm) Service employs the same "home area" and "premium area" calling and billing options. However, inbound calls cannot be received by the PCS handset in this version of the service when it is outside the "home area." Those inbound calls are routed directly to a voice-mail system provided to the customer and can be retrieved from either the home or premium areas. Outbound calls can still be made throughout an eight-county area when the customer is outside the home area for a nominal premium area charge. With this second version of the service, customers must be standing still or walking, as opposed to traveling in a car, when placing calls, as the signal does not "hand-off" from one PCS antenna site to another. GTE wants to identify how "mobile" PCS customers really want to be.
- Wireless PBX/Centrex Service. As noted in the attached press packet, GTE is also conducting a PCS market trial of large business customers in the Raleigh-Durham area. This will be a form of wireless PBX or wireless Centrex service.

By evaluating the use customers actually make of such services, GTE hopes to validate and calibrate other market demand data GTE has accumulated to verify the real demand for PCS in different market segments. GTE will also contact a minimum of 15,000-20,000 people who are not trial customers but are somehow related to trial participants, such as their neighbors. Through these types of contacts, GTE will gather outside perceptions of its Tele-Go^(sm) Service. After taking steps to ensure customer privacy, GTE -- with customer consent -- will analyze an estimated 20 million call records as well as examine customer diaries, conduct written surveys, and hold focus groups. GTE wants to know how customers react to the additional mobility and the substitution of wireless handsets for their wireline telephones for an extended period.

* * * *

GTE strongly supports the allocation of new spectrum for wireless applications. However, the FCC is currently contemplating an allocation of unprecedented magnitude based on purely speculative demand estimates. Given the scarcity of spectrum below 3 GHz suitable for wireless uses, GTE is concerned that hasty, premature decisions may not be in the best interest of the public. At the same time, GTE observes that statistically valid studies of demand are underway that could provide timely and much-needed answers.

B. PCS Should Be Introduced In A Way That Strengthens The Telecommunications Infrastructure.

An important issue facing Americans this year is the economic condition of the United States. Debates over declining investments in United States infrastructure were an important part of this year's Presidential election. Other countries are investing heavily in their telecommunications infrastructures and for the United States to retain a lead role, United States policy makers must make some tough decisions. PCS is an example where some tough decisions will need to be made. The FCC, in cooperation with the states, must determine the appropriate role PCS should play in becoming part of our infrastructure.

As discussed below, the Commission must determine whether it wants to leverage current investments in existing networks, regardless of who made those investments, or whether its policy should be to promote the bypass of those existing networks, thereby weakening them, and resulting in new networks replacing them over time. In such respects, significant issues clearly arise concerning LEC service. Substantial questions also are raised with regard to the use and role of the cellular and cable infrastructures for PCS. Finally, defining the role of foreign investment is particularly important as we seek to strengthen our Nation's position in the global marketplace.

1. **The Notice fails to address important questions regarding PCS' implications for local exchange telephone service and the public switched telephone network infrastructure.**

The Notice contemplates that PCS will be implemented with advanced wireless infrastructures that can technologically leapfrog existing networks. In furtherance of such initiatives, spectrum would be allocated in sufficiently large amounts to carry all of the traffic currently supported by the Nation's LECs on a wireline basis today. There is a real prospect that new PCS entrants will target important segments of the local exchange market. At the same time, the ability of telephone companies to incorporate wireless capabilities into the provision of telephone service is left in doubt.

GTE strongly believes that these fundamental concerns must be fully addressed in this proceeding. As discussed below, the Notice's vision of PCS could conceivably impact universal service programs mandated by regulation, affect local rates and the jurisdiction of state utility commissions, and necessitate an examination of interconnection access arrangements.

- a. **PCS could have an impact on current, regulatory-mandated, support programs.**

Over the years, both this Commission and state regulatory bodies have put in place a number of mechanisms broadly seeking to promote and protect universal service. The emergence of spectrum-rich 2 GHz services, however, could potentially supplant a significant amount of traffic now

carried on wireline networks, and thus impact those mechanisms this Commission and state bodies have intended to ensure the availability of affordable basic telephone service. For example, the Universal Service Fund ("USF") was designed and implemented to provide support payments to LECs which have cost characteristics significantly higher than the national average. The purpose of such a mechanism is to allow those LECs to keep the prices of their basic exchange services below that which they would otherwise have to charge customers -- in other words, to promote universal service. The desirability or even feasibility of maintaining such support mechanisms in light of PCS must be determined.

A hypothetical example may help to demonstrate the issue. Assume an interexchange carrier ("IXC") funding the USF obtains an authorization for PCS in an area served by a LEC receiving USF payments. The IXC would be providing payments to the LEC to hold down the price of services with which the IXC would be competing. If multiple licenses are granted in a particular area, the IXC would potentially be in the awkward position of having to "subsidize" one of its competitors while not having to make USF or similar payments to others with a PCS license in that area.¹¹ Under those circumstances, it would appear likely that those parties funding the USF will seek to have the funding mechanism changed substantially. The

¹¹ With its recent proposed investment in McCaw, for example, AT&T will likely be in a position where it will pay USF contributions to LECs to subsidize services that compete to a degree with cellular services.

resulting impact on the telephone rates for customers dependent upon telephone service needs to be considered. This issue is not discussed in the Notice.

Even if the PCS license holder is not an IXC, the existence of PCS can result in distortions to the USF funding mechanisms. An IXC's portion of the USF amount is based upon its proportion of presubscribed telephone lines.¹² An IXC would be advantaged by inducing its customers to remove the IXC as their presubscribed carrier and use PCS to connect to its network. The carrier might even encourage the customer to disconnect the telephone line all together. By doing so, the IXC not only eliminates a portion of its USF contribution, it also avoids carrier common line ("CCL") payments, another component of an increasingly unsustainable support mechanism.

b. PCS could impact local rates and the jurisdiction of state commissions.

The USF and CCL examples lead by illustration to an area of regulatory concern -- the jurisdictional regulatory authority. It is possible and even likely that the advent of PCS will impact the price levels and rate structures to be charged by LECs, not only for interstate access services, but also for local exchange services as well. Many PCS proponents envision

¹² See 47 C.F.R. § 69.116 (1991).